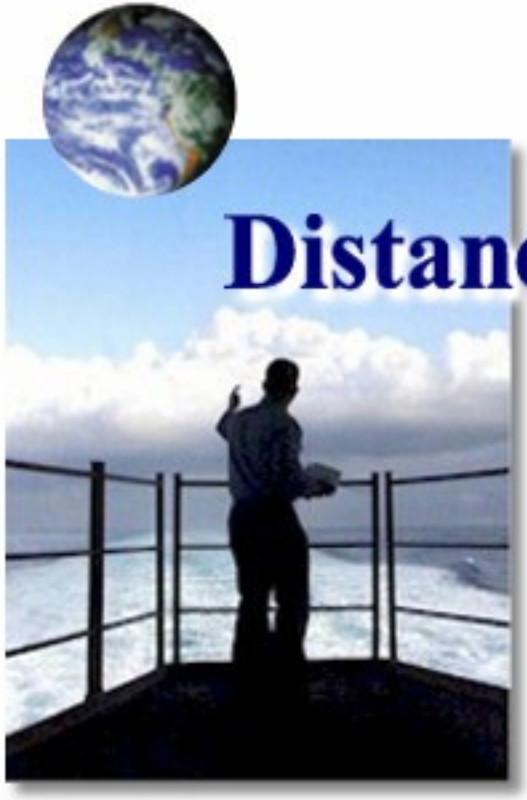

Distance Support

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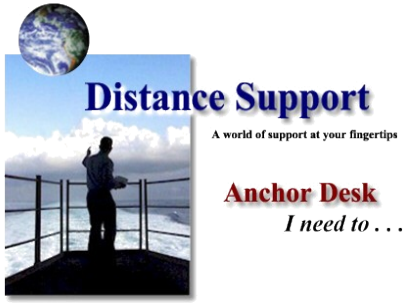
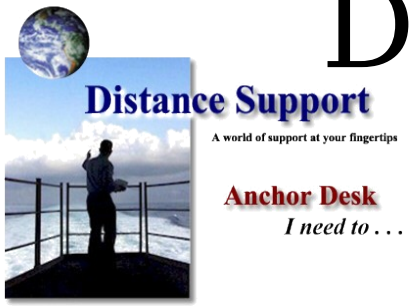
Distance Support version 2

30 June 2004



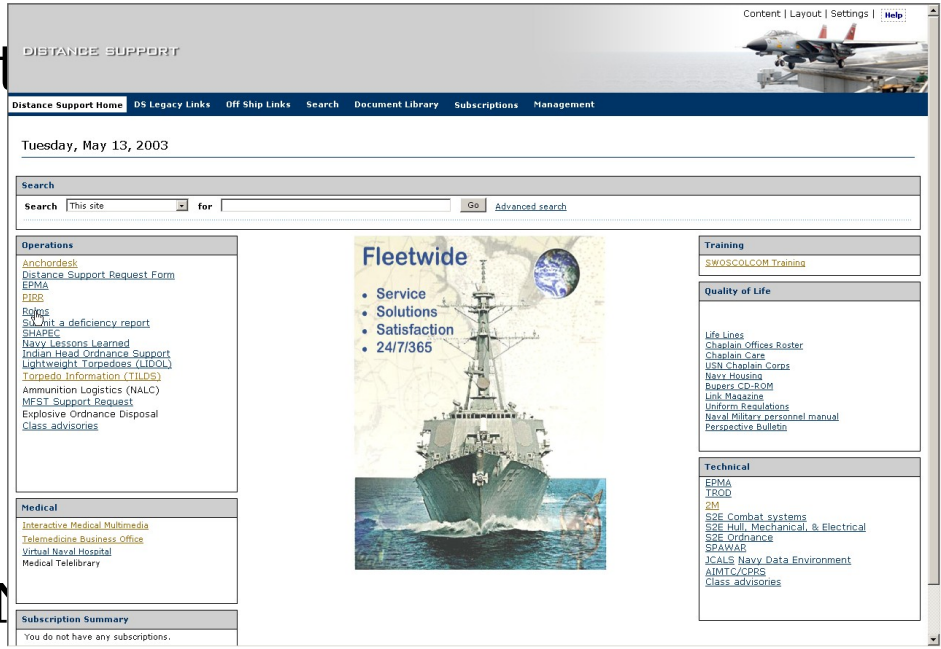
Outline

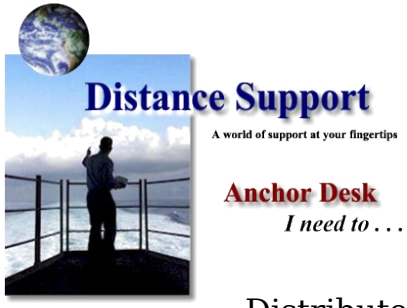
- **Distance Support version 2 is…**
  - **Is not…**
  - **JDSR ACTD**
  - **Status**
  - **Schedule**
- Process Overview
  - Technical Concept
- Current Content Briefs



Distance Support version 2 Is...

- Shipboard Resident Content
  - Technical
  - Training
  - Electronic Aids
  - Quality of Life
- Conduit of Sensor Data
- Relationships
  - SPAWAR PEO(C4I) Teaming (N
  - TDKM/Virtual Submarine (Knowledge Management)
  - NETC (Training)
  - NAVSEA PEO(S) (Smart Ship – Wireless)





…via Bandwidth Availability

FULL Data Replication In Port / **Sensor Data Replication During BW Avail.**

Distributed Gateway

Site #1

- Load Balancing
- Replication/Synchronization
- "Collaboration" Hosting

Site #2

Site #3

Gateway Controller

Gateway Firewall

NOCC Firewall

Ship Network (ADNS)

Mission Essential EMCON Data & Information

Sensors (ICAS)

Wired Network (ISNS)

DS 2.x

Wired Network (ISNS)

Wireless

Mobile Applications (DDG 51 Class)

IT 21 Users

Sync or Wireless

Gateway Firewall

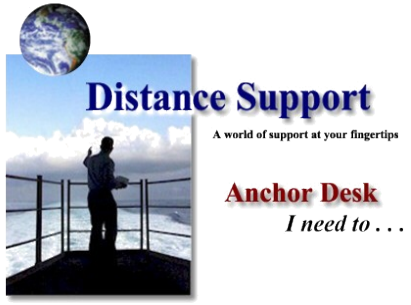
Content/ Data Synch.

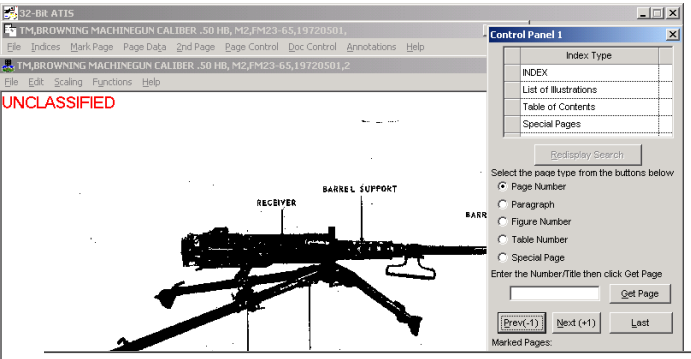
Firewall(s)

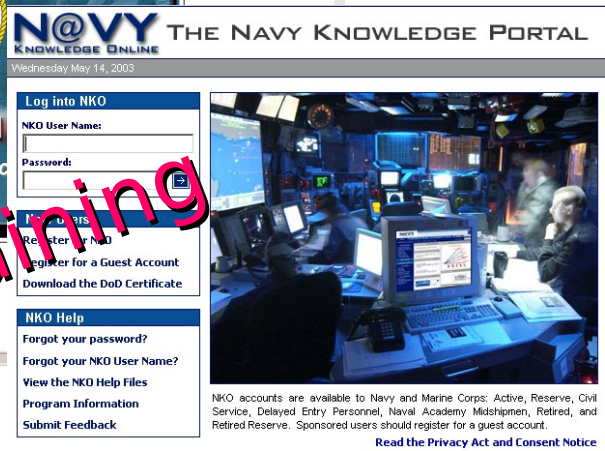
Content Providers (RRC, CRM, Tech Data, Navy Content)

is…

…Shipboard Resident Content



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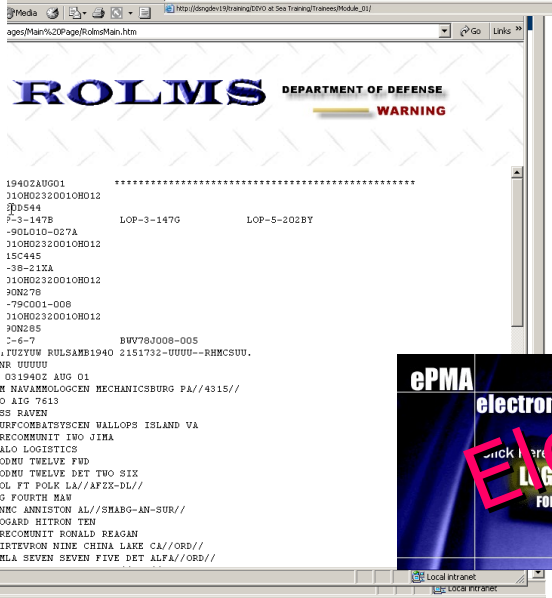
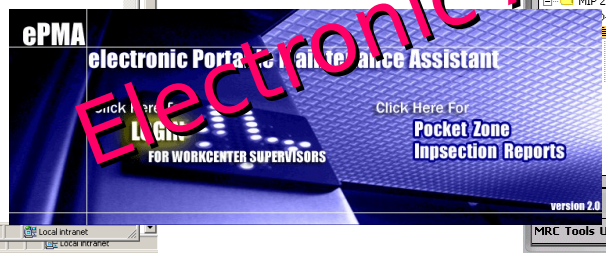
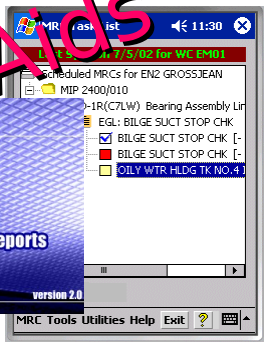
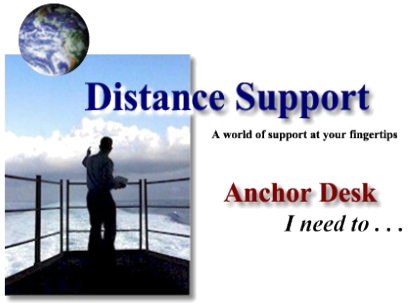


Electronic Aids



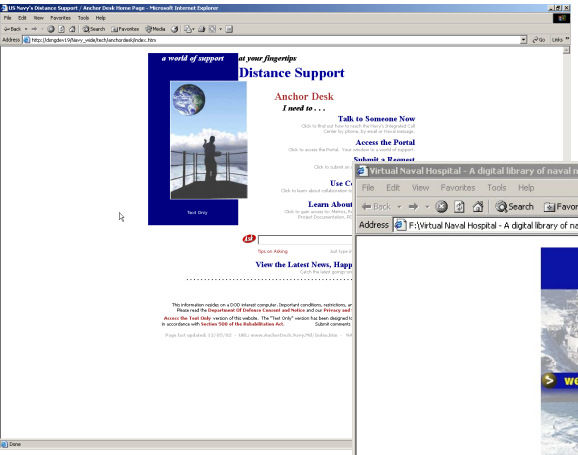


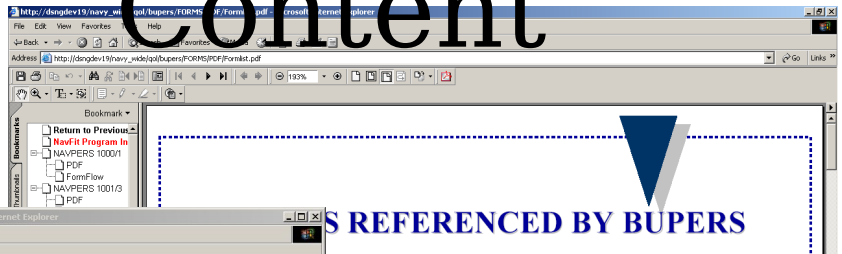


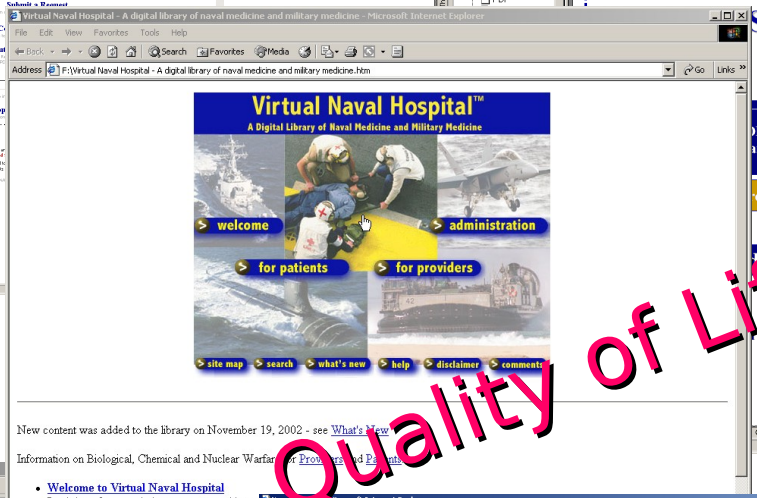
is…

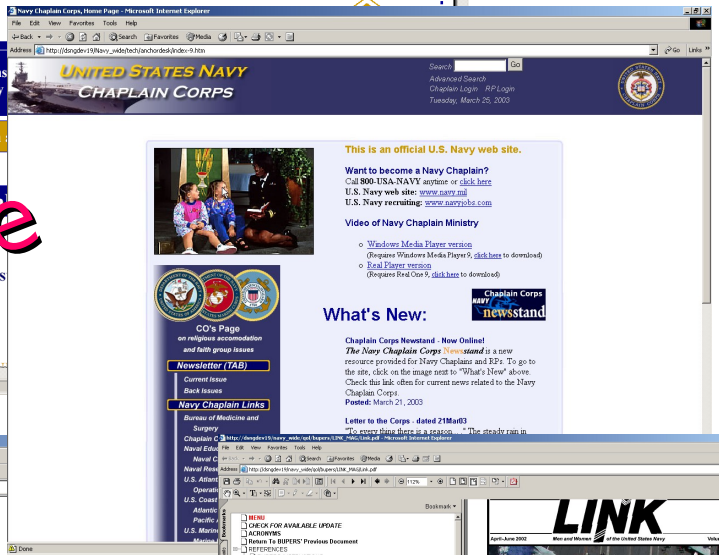
…Shipboard Resident Content

Quality of Life





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Chaplain Corps newsstand
Chaplain Corps Newsstand - Now Online!
The Navy Chaplain Corps Newsstand is a new resource provided for Navy Chaplains and RPs. To go to the site, click on the image next to "What's New" above. Check this link often for current news related to the Navy Chaplain Corps.
Posted: March 21, 2003
Letter to the Corps - dated 21Mar03

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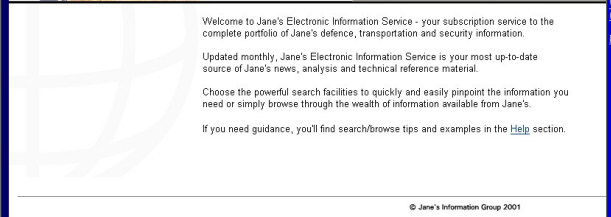
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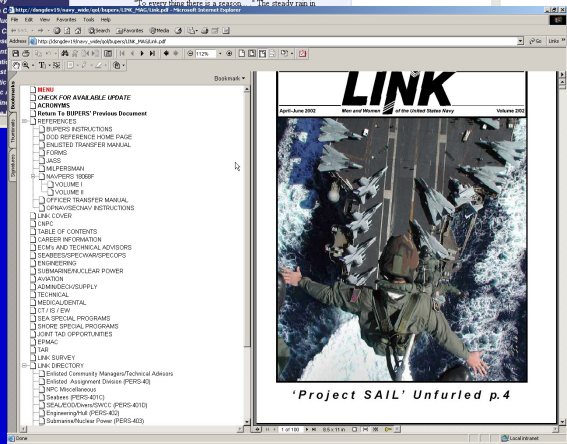
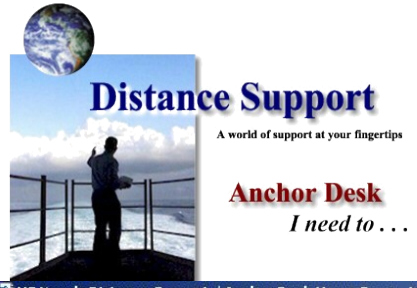
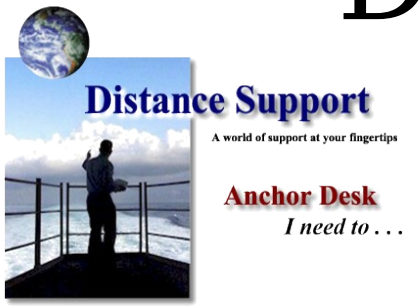


is…

…Shipboard Resident Content



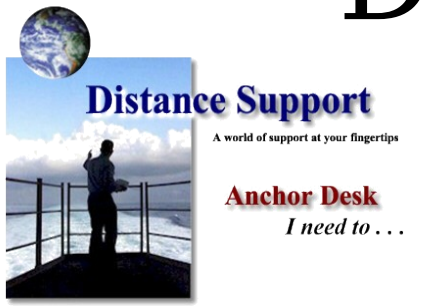
Shipboard Resident Content

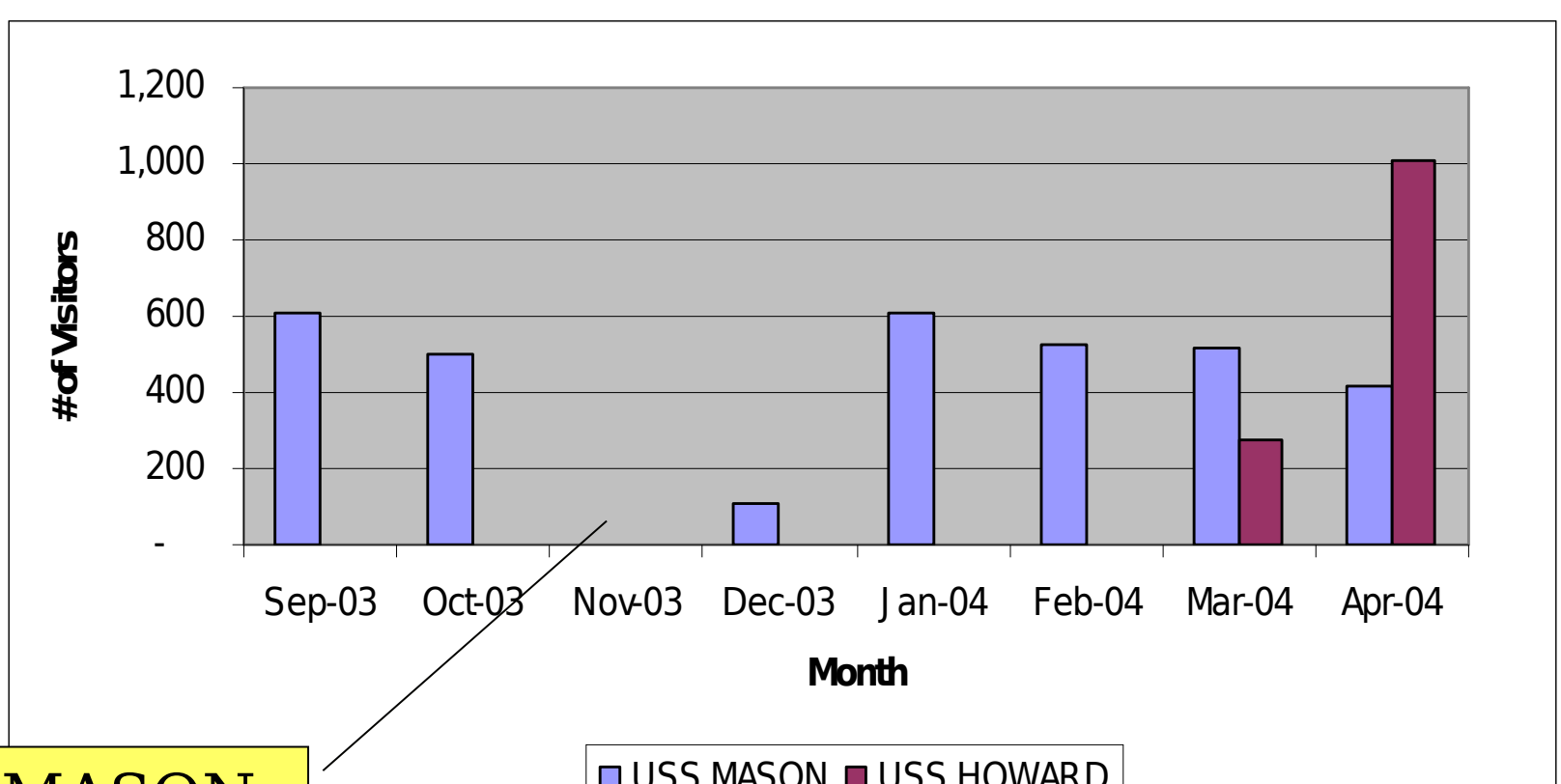


Distance Support version 2 Is NOT…

- Real Time Critical Content
  - Medical
  - Tactical
  - etc.
- Controlled from Shore

Distance Support version 2 Usage

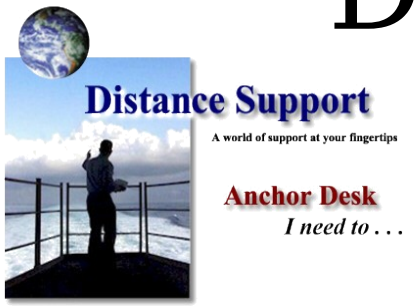




MASON in Dry Dock

Average Visit Length 11 to 17 mi

Distance Support Version 2 Is…



…the Foundation for the
Joint Distance Support and Response ACTD

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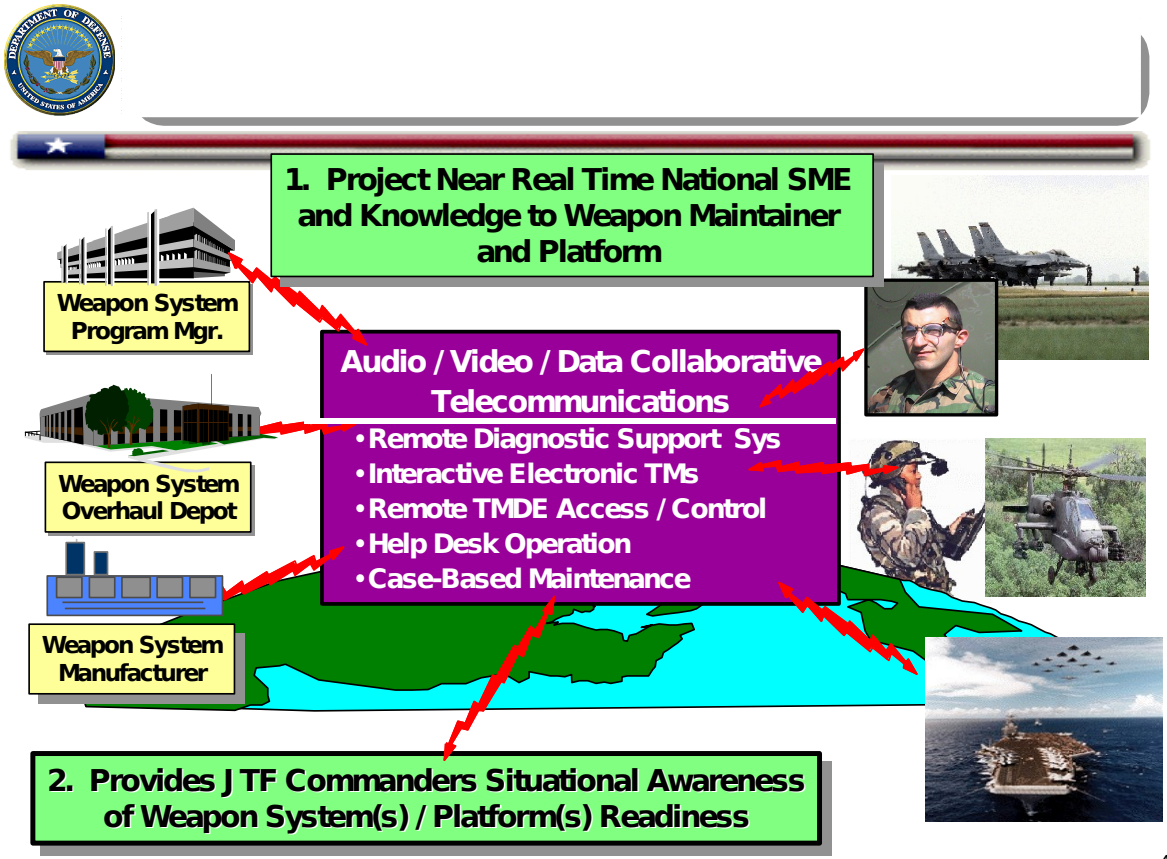
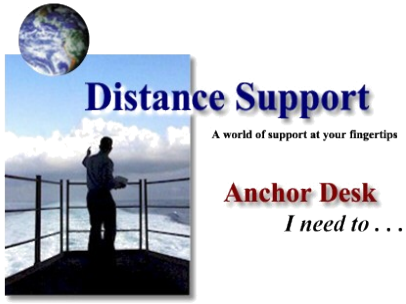

1. Project Near Real Time National SME and Knowledge to Weapon Maintainer and Platform
Weapon System Program Mgr.
Audio / Video / Data Collaborative Telecommunications
• Remote Diagnostic Support Sys
• Interactive Electronic TMs
• Remote TMDE Access / Control
• Help Desk Operation
• Case-Based Maintenance
Weapon System Overhaul Depot
Weapon System Manufacturer
2. Provides J TF Commanders Situational Awareness of Weapon System(s) / Platform(s) Readiness



JDSR ACTD OD #2 March/April 2004 – Participants

NUWC Keyport, WA

Tinker AFB, OK

NSWC Crane, IN

WP AFB, OH

Ft. Lewis, WA

Patuxent River, MD

Reno Army, NV

RAF Lakenheath, UK

NICC, VA

Kapaun AS, GE

Hill AFB, UT

FTSC, VA

Spangdahlem AB, GE

NSWC PHD, CA

USS MASON

NATEC, CA

Huntsville, AL

Mayport, FL

29 Palms USMC, CA

Huntsville, AL USMC

Albany, GA

Ramstein AB, GE

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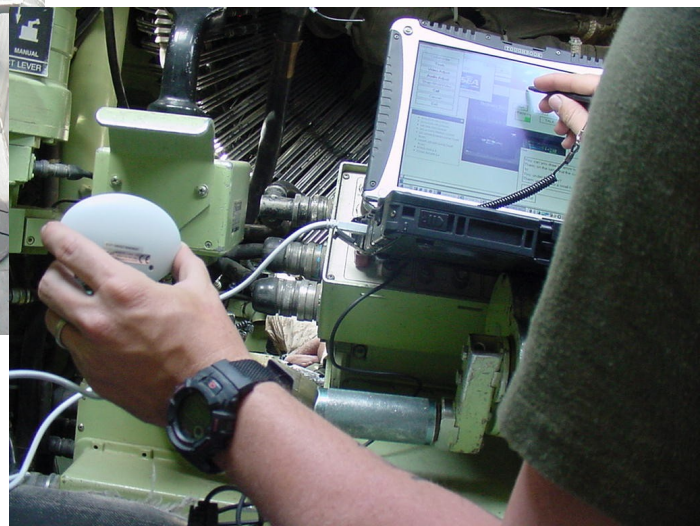
JDSR ACTD OD#2



Summary Results

Objective	GREEN	AMBER	RED
Effectiveness of J DSR in support of diagnostic work	✓		
Effectiveness of J DSR in support of repair work		✓	
Capability of J DSR to increase the commander's combat readiness by providing increased maintenance response	✓		
Effectiveness of J DSR information assurance		✓	
Reliability, availability, and maintainability of J DSR	✓		
J DSR network suitability	✓		
J DSR usability by typical operators in the operational environment	✓		
J DSR system training		✓	
Potential savings from the J DSR system	✓		
Interoperability of J DSR components and standard tools within common operating environments	✓		

GREEN Met or exceeded requirements
AMBER Met most requirements; needs minor improvement
RED Did not meet requirements; needs significant improvement

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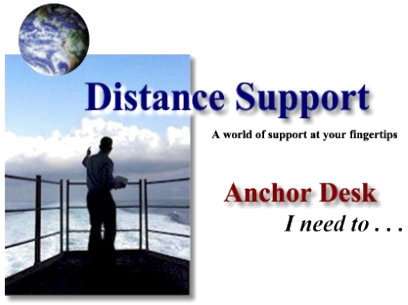
JDSR ACTD OIF

- Today:
  - Supporting Army Firefinder Maintenance on a Daily Basis
- Summer/Fall 2004:
  - Part of USMC Wave 2 Maintenance Support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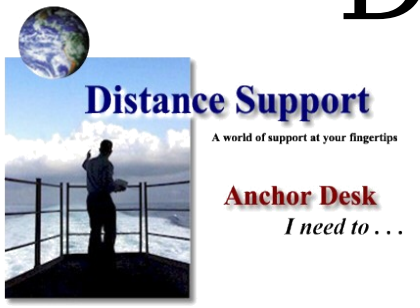
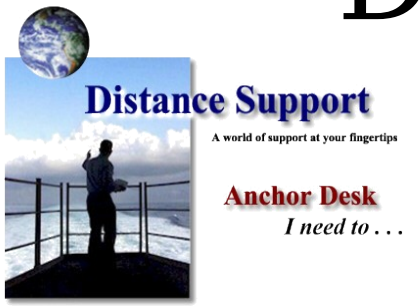
Status



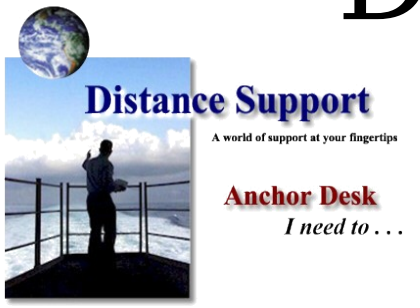
Distance Support version 2 Status

- Certifications/Approvals:
  - SPAWAR NCR/SSIL Certified: SSIL-03-0052
  - NETWARCOM IATO: 15 Dec 03
  - FFC N6 Approval: Naval Message 271218Z Feb 04
- Installation
  - Installed: USS MASON, USS HOWARD, USS ELROD, USS RAMAGE, USS ROSS
  - Scheduled FY04:
    - USS LEYTE GULF, USS BULKELEY
    - Support of Trident Warrior 04: USS JOHN PAUL JONES, USS TARAWA
    - PACFLT ESG (??? – Funding Issue)



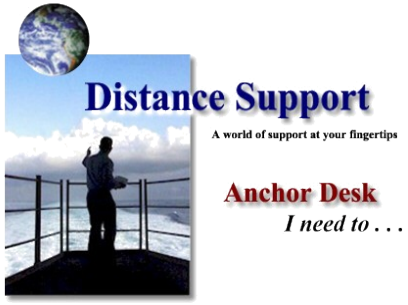
Distance Support version 2 Issues

- Funding for Installations in Support of Fleet Request (Per ESG)
  - Installation cost $150k per ship
  - Currently not POM'd
- Coordinated NAVSEA/SPAWAR PEO(C4I) Installation
  - NAVSEA – Software package (DS 2, ATIS, SKED, TLMS, etc.)
  - SPAWAR PEO(C4I) – Hardware Hotel
- Business Rules for Content



Distance Support version 2 Issues (cont.)

- Submarines
  - Requires SIPRNET Infrastructure
    - Summer CY04 with Funding
  - SPAWAR PEO(C4I) Rollout Alignment
  - Merge of Technology
    - TDKM
    - KTOD ACTD
  - Successful Preliminary Demonstration
    - PACFLT N4 Lab Installation Jan. 04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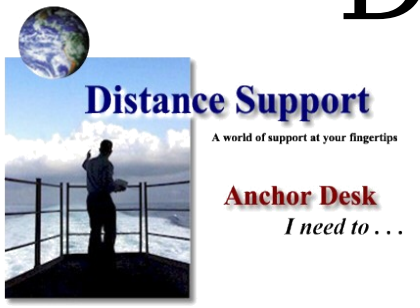
Schedule

Distance Support version 2 Schedule



FY03 | FY04 | FY05 | FY06

1qtr 2qtr 3qtr 4qtr | 1qtr 2qtr 3qtr 4qtr | 1qtr 2qtr 3qtr 4qtr | 1qtr 2qtr 3qtr 4qtr

DS 2.0 Beta

SPAWAR Certification

DDG-87

JDSR Alpha

Demo 1 USAFE

JDSR Beta

Demo 2 Joint

Demo 3 Joint

JDSR OIF Support

DS 2.0

SPAWAR Certification

DDG-83

DDG 71,84 FFG 55

BG

LHA-1; DDG 53 TW

BG BG BG BG

SUBPAC LAB

TDKM/KTOD ACTD/ JDSR ACTD Integration and Infrastructure Build

SPAWAR Certification

SPAWAR Certification

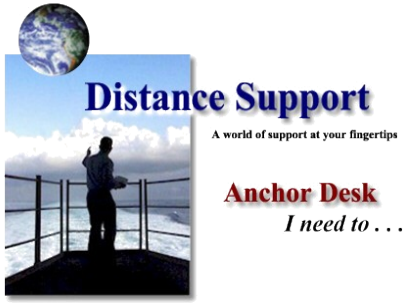
DS 2.0S (SIPRNET)

SSN Installation

DS 2.1

By BG Installation

Notes:
BG = Battle Group/ESG/ARG
TW = Trident Warrior
USAFE = United States Air Force European Command
OIF = Operation Iraqi Freedom



Outline

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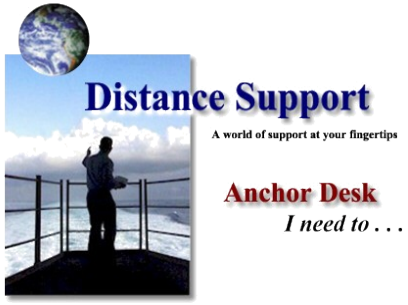
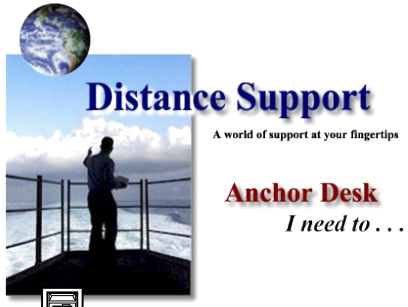
  - Status
  - Schedule
- **Process Overview**
  - **Technical Concept**
- Current Content Briefs



Technical Concept



Tier Structure

Content Providers

Distributed Gateway #1

Distributed Gateway #2

Distributed Gateway #3

Distributed Gateway #N

Amendment Server #1

Amendment Server #2

Amendment Server #3

Amendment Server #4

Amendment Server #5

Amendment Server #N'

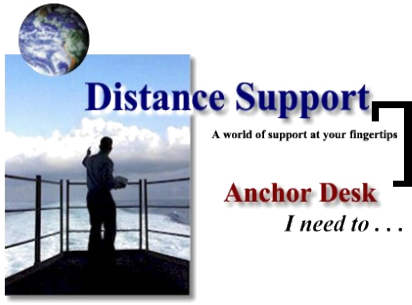
Upper Tier
(Shore Infrastructure)

Mid Tier
(Ship)

Distance Support v 2

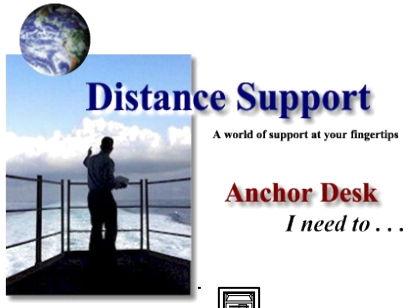
Distance Support v 2

User



Tier Structure Concepts

- Distributed Gateways (DG)
  - Each DG Manages Specific Content (ie Submarine DG manages Submarine content, NAVAIR DG manages Navy Air content, etc.)
  - Architect allows replication between DGs
  - ***DG Can be Navy ERP or NMCI Server Farm***
- Amendment Servers
  - Security Layer for DGs
  - Adds Redundancy
  - Economically Scalable
    - An Amendment Server is 1/100th Cost of DG
  - Rapidly Address Geographic Location and Load Balancing Issues as we Scale Up
  - Best Fit for Minimum Bandwidth Content Solutions



Tier Structure - Today

Content Providers

Distributed Gateway (NSWC Crane)

Distributed Gateway (JATDI)

Amendment Server (NSWC Crane)

Amendment Server (NSWC PHD)

Amendment Server (JATDI, Huntsville)

Upper Tier
(Shore Infrastructure)

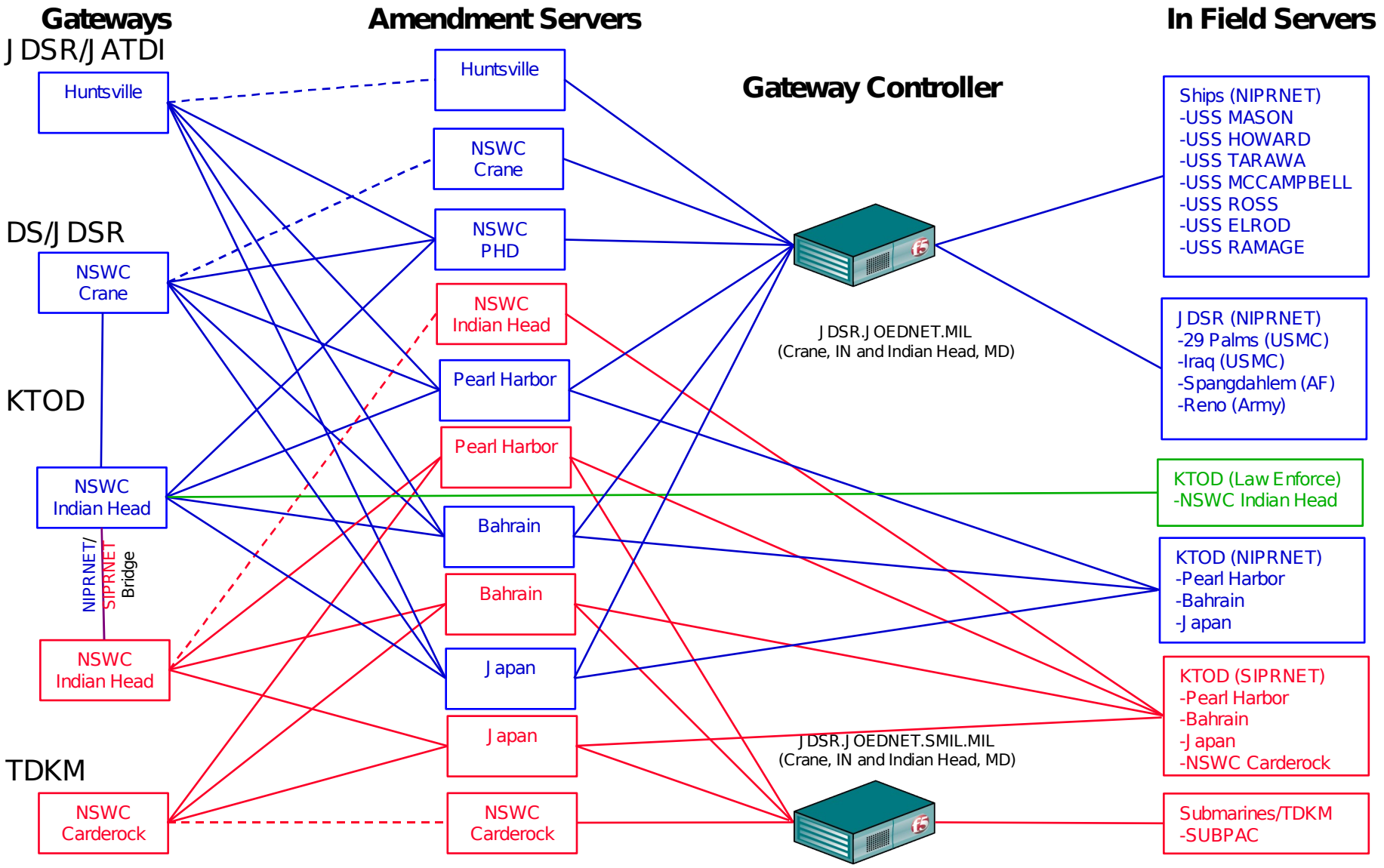
Mid Tier
(Ship/USMC Base)

Distance Support v 2

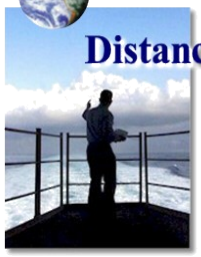
JDSR ACTD LMS

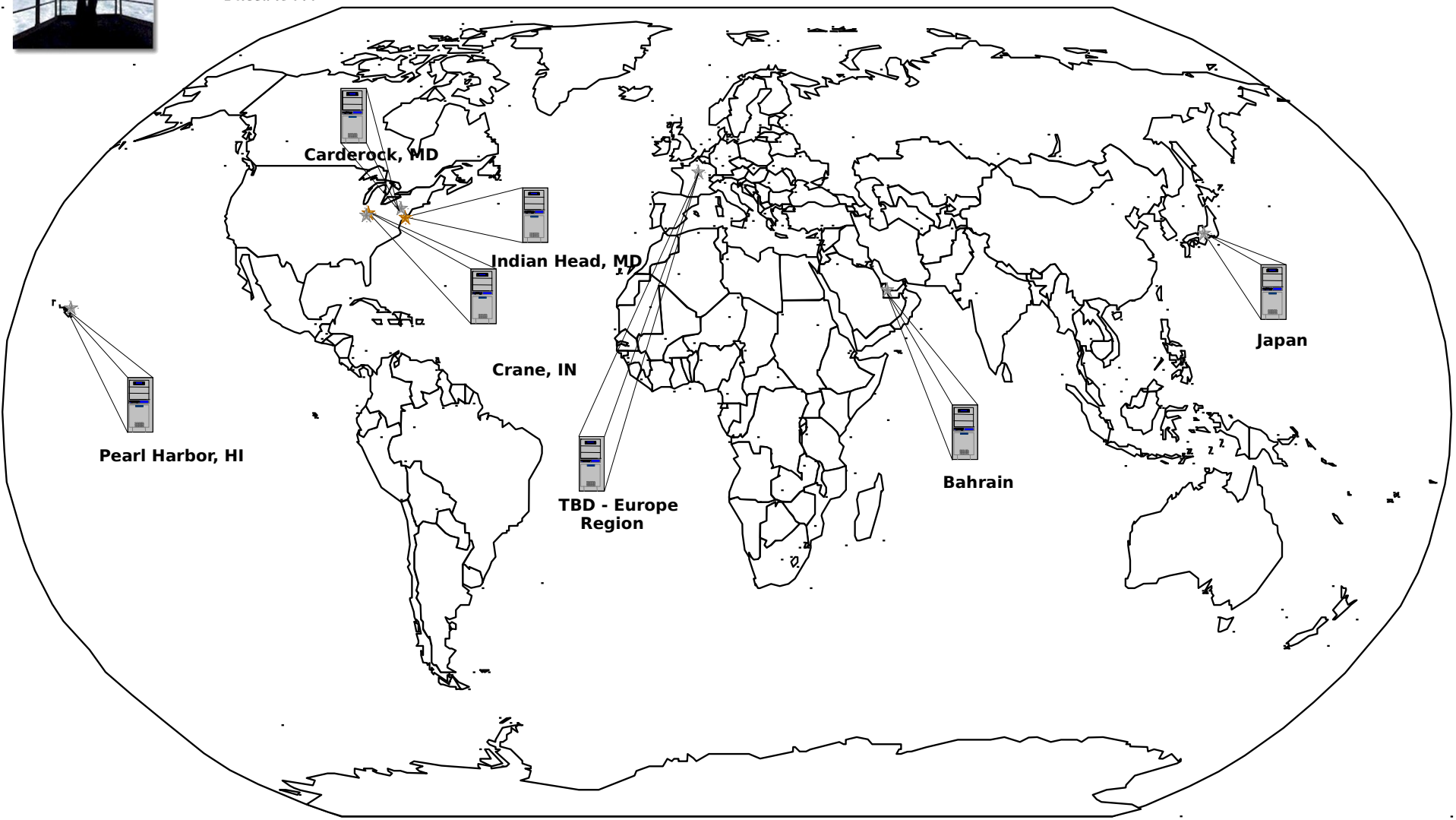
User

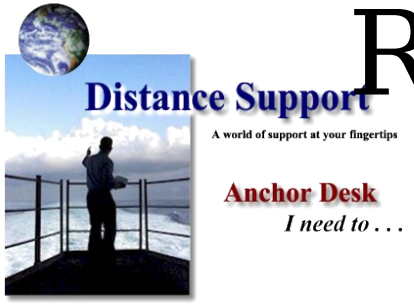
J DSR/KTOD ACTDs & DS/TDKM Fall 04 Data Connections



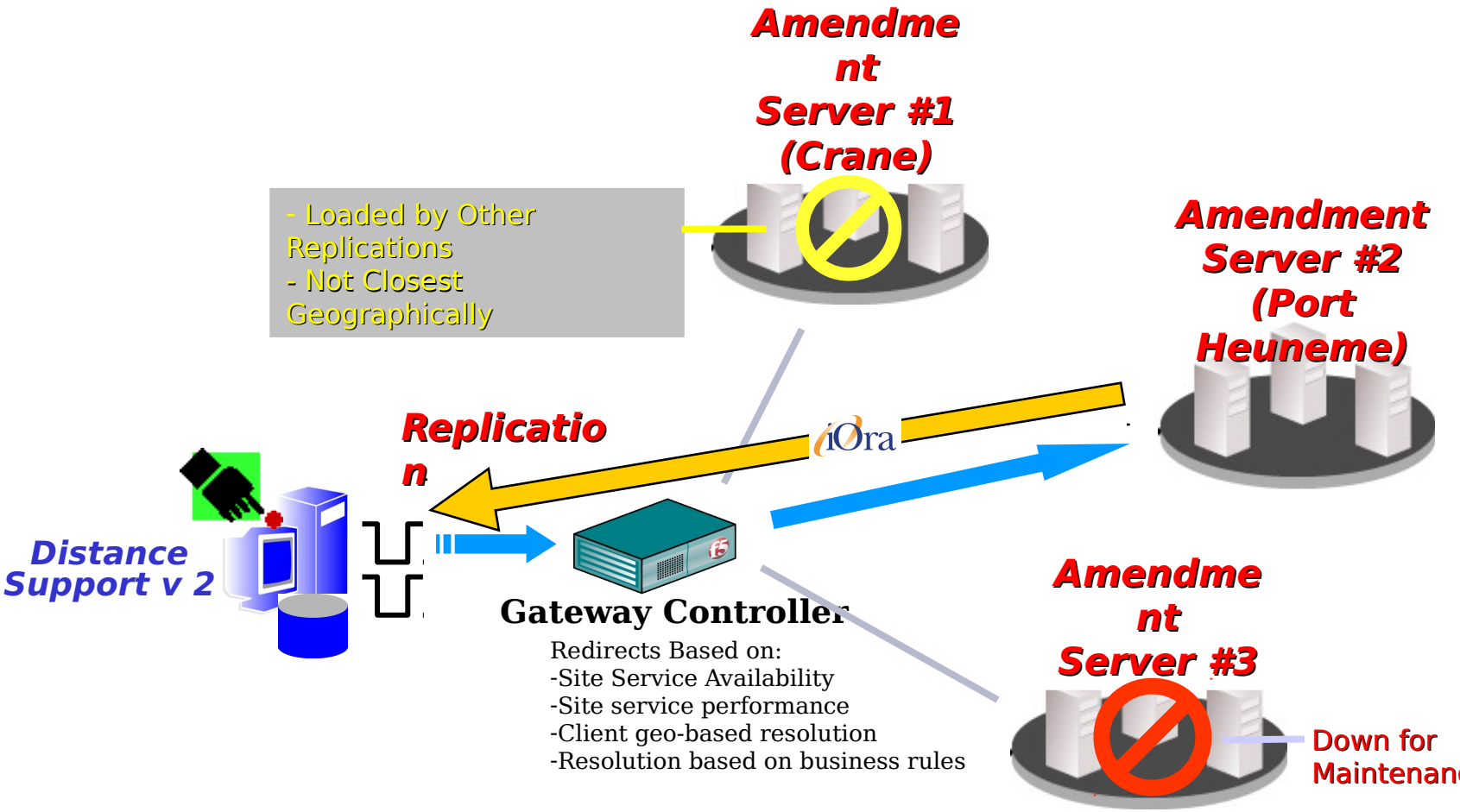
Global Collaboration Infrastructure

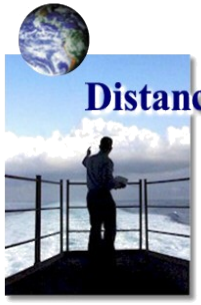




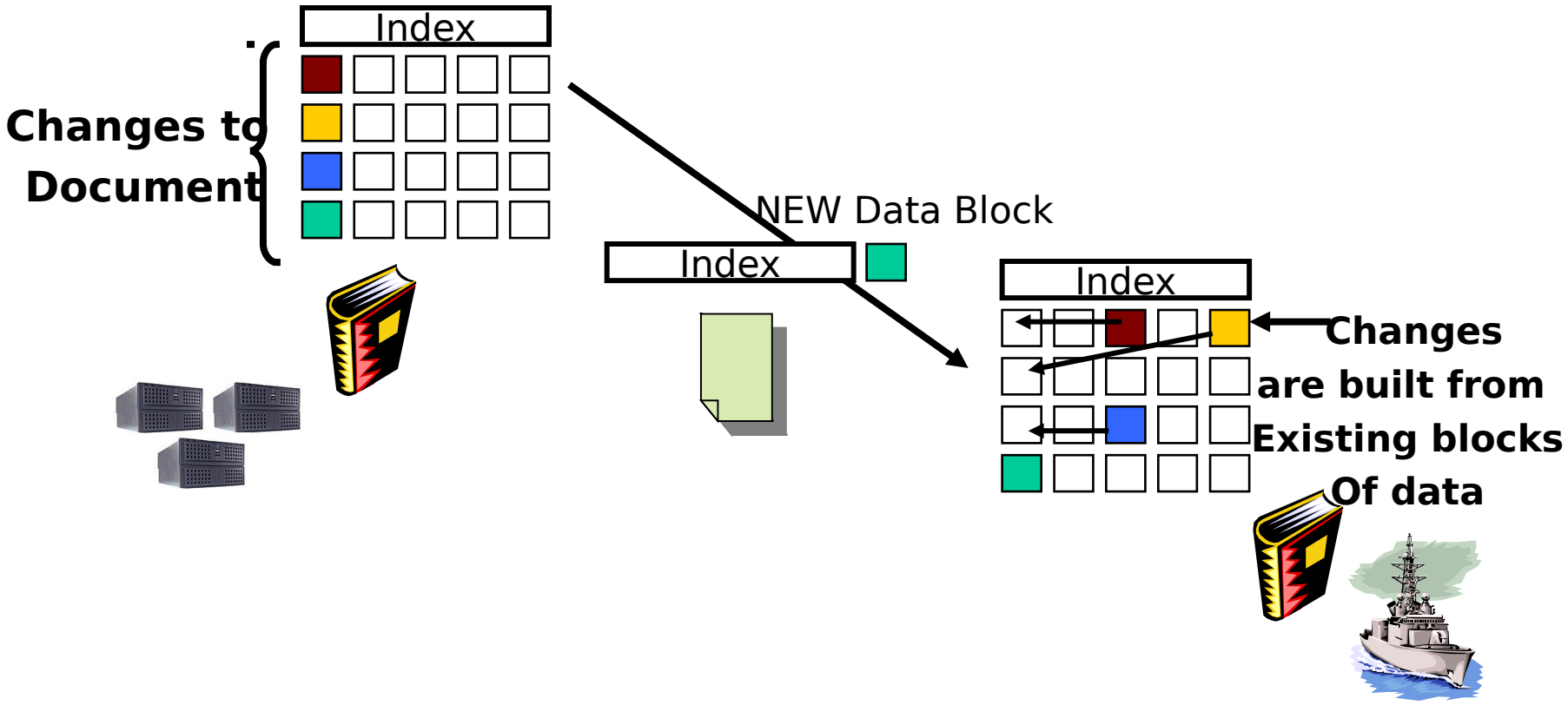


Replication Architecture Gateway Controller

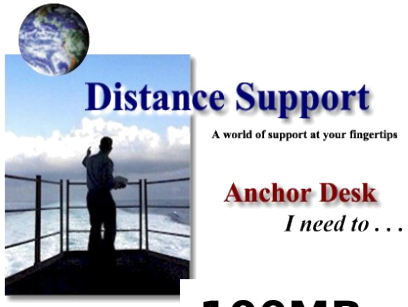




iOra Epsilon Update/Synchronization



Document Changes are built from an Index, NEW blocks of data and Existing blocks of Data!



Example of how Epsilon Works

100MB of updated content

1. IDENTIFY CHANGES

10MB of new and modified files or pages

2. EPSILON

500KB of unique data blocks

3. COMPRESS & ENCRYPT

200KB amendment file

4. TRANSMIT AMENDMENT
(< 1 min over 56kbs

page

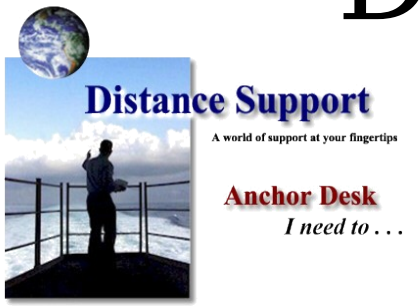
iOra Publisher publications database

Copy of 100MB of updated con

iOra Client publications database

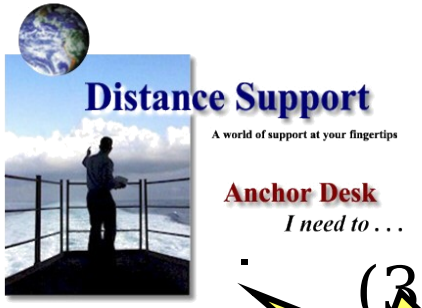
5. DE-COMPRESS AND ADD TO CLIENT DATABASE

6. DECRYPT & DE-EPSILON FILES/PAGES ON DEMAND



Distance Support version 2 ICAS

- DS 2 is the Conduit for Automatically Transporting ICAS Sensor Data from Ship to Shore
  - DS 2 Compression and Replication Results in ~70kb file per week
  - Requires ICAS Workstation Connected to ISNS LAN
    - DDG Configuration
    - Upgrade Required on non-DDG Ships



ICAS Data Flow

(3)

68Kbyte File

Am

Gat y Contro ler

Live Mode

Reach Back

68Kbytes Transferred ~2-5 Sec. IMRSAT

(2)

Ship Network (ADNS)

onnected Mode

Data Replication/Synchronization

>400Mbyte File Reconstituted

D wa

773Kbyte Increase in File Size In 10 days

(1)

Wired Network (ISNS)

ICAS Work tati

>400Mbyte File

Distance Support v 2

Gateway

Firewall

Data Synch.

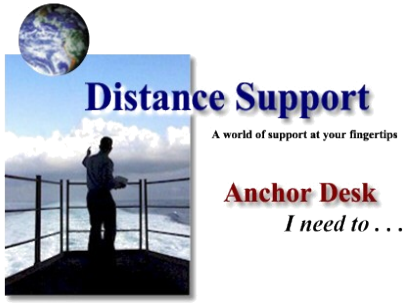
Firewall(s)

(5)

ICAS – ISEA Pull

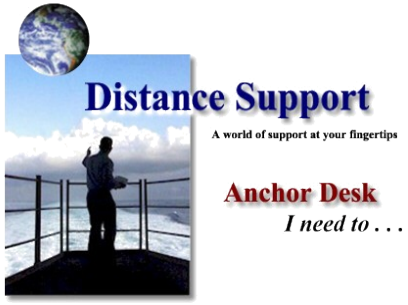
1. DS2 server pulls the ICAS data from the ICAS work stations once a week
2. Once a week the ICAS data is transferred from the DS 2 server off ship to an amendment server
3. The amendment server receives changes from the ship
4. The Distributed Gateway pulls the changes from the Amendment server
5. Data pulled by the ISEA

Real Ship Data Transfer 30 Dec - 8 Jan. 04

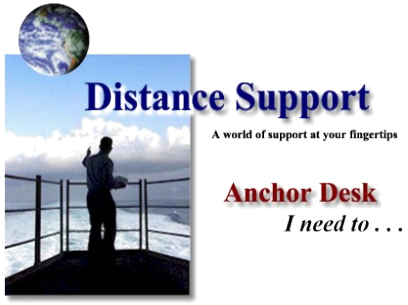


Distance Support version 2 Content Size

- ATIS Tech Manuals 250 Gb
- Training 100 Gb
  - NKO Afloat, NETg, etc.
- Navy Wide Content 75 Gb
  - Anchordesk legacy links, medical, QOL, operations, etc.
- SKED 15 GB

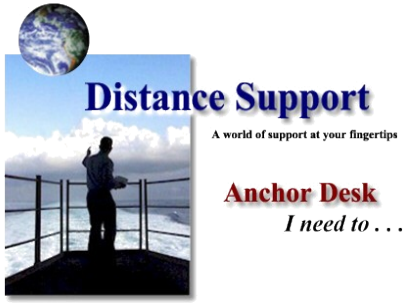


Process Overview



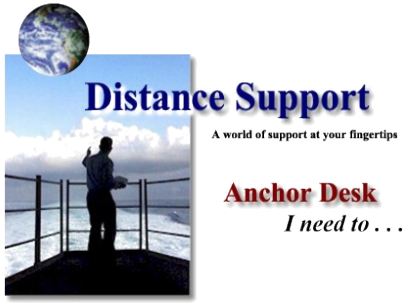
Content Gathering Methods

- Sponsor Provided
  - CDs
  - Database to Database
  - Secure FTP
- Systematically Negotiate And Retrieve Files (SNARF)
  - Scrapping of Public Accessible Websites



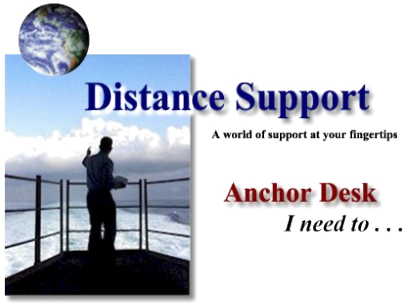
Outline

- Distance Support version 2 is…
  - Is not…
  - JDSR ACTD
  - Status
  - Schedule
- Process Overview
  - Technical Concept
- **Current Content Briefs**



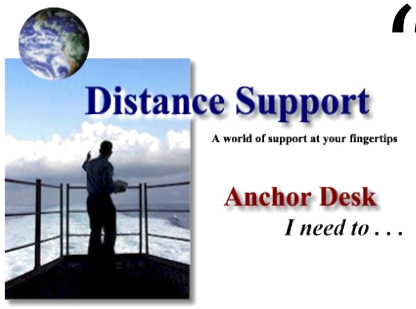
Current Content [Sponsor]

- Navy Knowledge Online Afloat [NPDC]
  - Threaded Discussion Replication on/off Ship
- NETg (training content) [NPDC]
- ICAS Sensor Data [NAVSEA 05]
  - Strictly Data Replication off Ship
- CNSP Directives [SURFOR]
- Distance Support Anchordesk [NAVSEA 04]
  - BUPERS, Sailor to Engineer, ROLMS, Chaplain, etc.



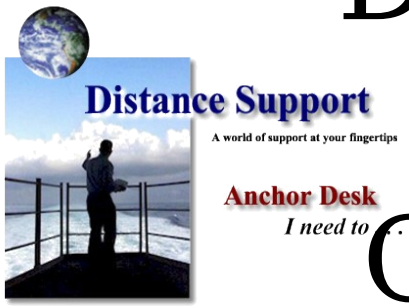
Current Content [Sponsor] (cont.)

- ATIS [NAVSEA 04]
  - Cohabitate on Same Hardware
  - ATIS Content Replication via DS 2.0 only USS MASON, USS HOWARD as Test Case (Duplicate ATIS Database)



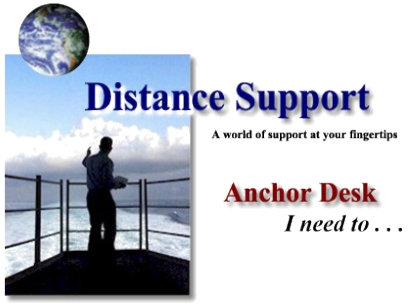
“In The Works” Content [Sponsor]

- Joint Aviation Technical Data Integration (JATDI) [NAVAIR]
- Technical Data Knowledge Management (TDKM) [NAVSEA 07]
- Material Logistic Data Network (MLDN) [NAVSEALOGCEN]
- Naval Safety [NAVAL SAFETY]
- More…

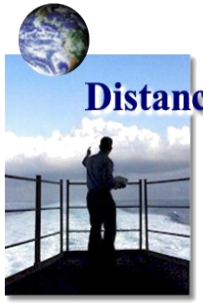


Distance Support version 2.0 Co-Existing Applications

- ATIS
- NKO Afloat
- SKED
- Electronic Preventive Maintenance Aid (ePMA)


Distance Support
A world of support at your fingertips
Anchor Desk
I need to . . .

Backups



Map Key

Maintainer Site

SME/Technical Site

JDSR Infrastructure Site

- METNAV/ATCAL Sites

- Helicopter Sites

- Tracked Vehicle Sites

- F16 Sites

- DDG Sites

- Response Tool Infrastructure Sites

- Replication Infrastructure Sites

- CRM Site